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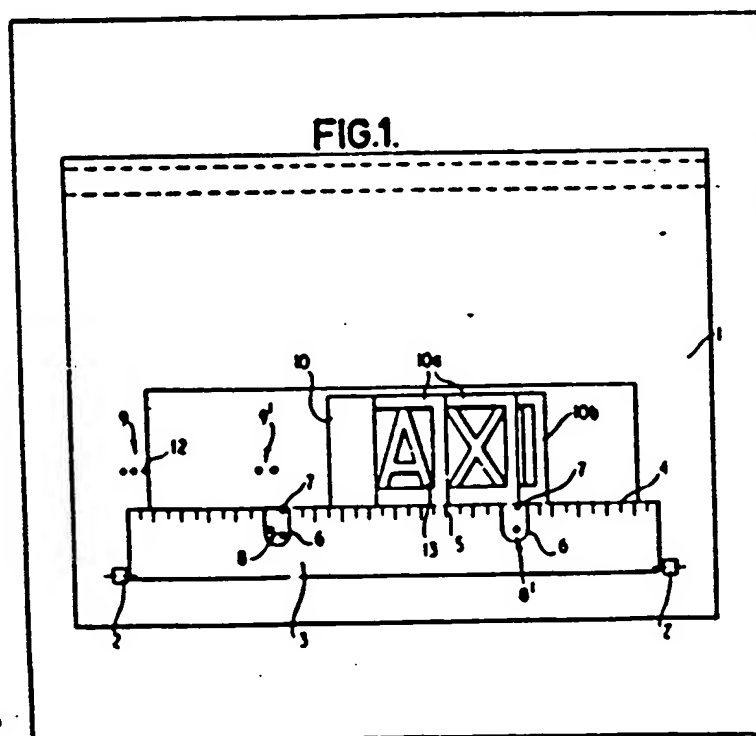
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- (54) Information display panel

- 1571 A method of making an information display panel, especially a vehicle registration plate, comprising arranging characters cut from a thin opaque material loosely on a

contrasting backing sheet and then adhering a sheet of transparent material to the backing sheet so that the characters are trapped in the required arrangement between the backing sheet and the transparent sheet, and are visible through the transparent sheet.



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FIG.1.

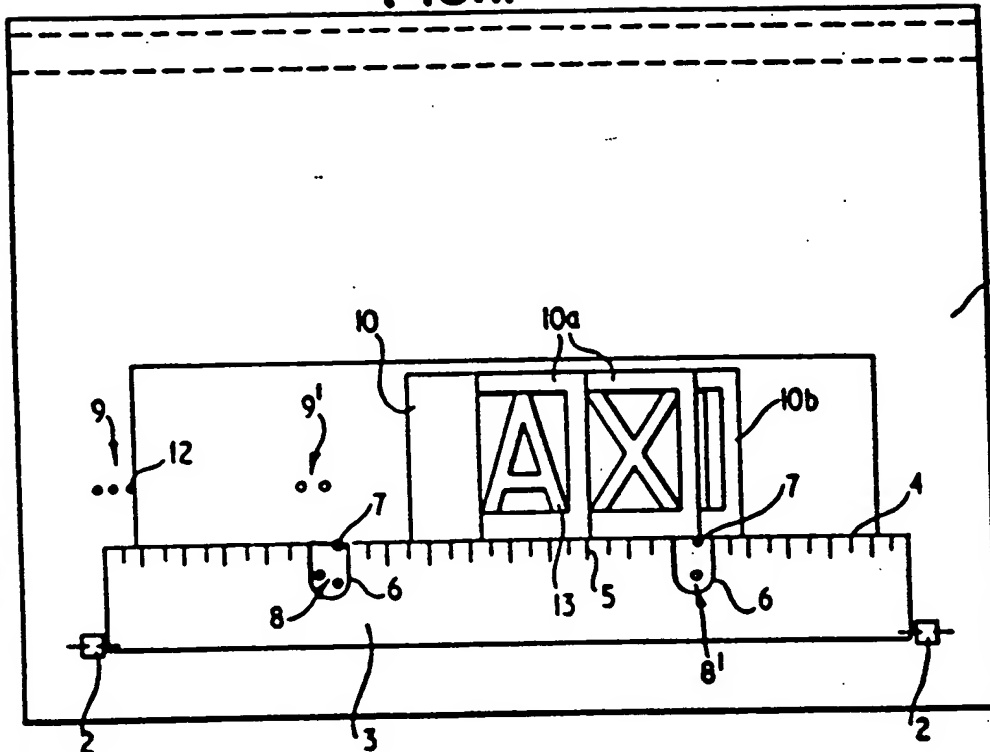
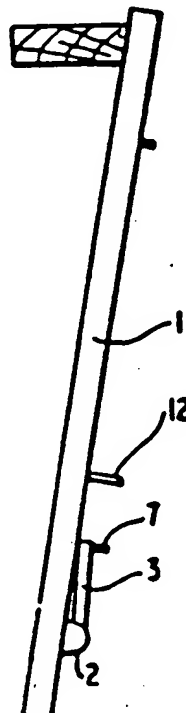


FIG.2.



SPECIFICATION

Information display panel

This invention concerns a method of making information display panels, for example, signboards or nameplates, and especially vehicle registration plates. It also relates to information display panels made by the method.

One type of vehicle registration plate which is widely used consists of an opaque backing sheet to which the characters making up the vehicle registration number have been applied, covered by a sheet of transparent plastics material, usually an acrylic resin material. Conventionally, the letters have been transferred onto the backing sheet by applying pressure to a rectangular substrate onto which the individual letters and numerals have been printed (in a manner similar to the "Letraset" — Registered Trade Mark — instant lettering system), and then the transparent plastics sheet has been stuck to the backing using a clear adhesive. This method suffers from the disadvantages (i) that the transfers are relatively expensive, and (ii) that, because the letter, and numerals are not always consistently positioned on the transfers which are commercially available, it is difficult to align the letter and numerals accurately on the backing sheet. This is a serious disadvantage because the spacing of the letters and numerals on a vehicle registration plate is strictly specified by legislation.

According to this invention, a method of making an information display panel, such as a vehicle registration plate, comprises arranging characters of a thin opaque sheet material loosely on a contrasting backing sheet, then adhering to the backing sheet carrying the characters a sheet of transparent material, so that the characters are trapped between the backing sheet and the transparent sheet, and are readily visible through the transparent sheet.

For a vehicle registration plate, the backing sheet is preferably of a white or yellow reflective material and the characters are preferably black, as specified by the current legislation in Great Britain. The transparent sheet is preferably a clear acrylic resin, for example either of those commercially available under the Registered Trade Marks "Plexiglass" or "Perspex". The black characters are preferably cut from a very thin, tough and opaque plastics sheet material, such as the biaxially-orientated high-impact polystyrene, 50 microns in thickness, available from the Belgian company Sidplax. The characters must be sufficiently thin for their thickness not to interfere with the bond between the backing sheet and the transparent sheet in the finished plate. The reflective backing sheet is preferably that available from the Minnesota Mining Manufacturing Co. Inc. under the Registered Trade Mark "Reflectolite" which is a plastics based film provided with a removable paper backing. In carrying out the method of the invention, the paper backing is preferably removed and replaced by a 200 micron thick sheet of acetate film. This strengthens the

finished registration plate and enables it to meet the impact test in BS AU 145a.

In order to ensure that the characters in the registration plate are correctly and accurately positioned relative to one another and to the edges of the plate, they are preferably aligned on the backing sheet using a jig and a set of formers which can be laid on the backing sheet in contact with one another, and which are designed to receive the individual characters as an exact fit.

One method of making a vehicle registration plate according to the invention will now be described, with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a jig, showing a registration plate in the process of assembly, and

Figure 2 is a side elevation corresponding to Figure 1.

The jig comprises a flat board 1, to which is attached by hinges 2 a flat strip member 3 so that the strip member can either lie parallel to the board or be pivoted upwards relative to it. The front edge 4 of the strip member 3 is marked with a scale 5 and provided with two cut outs 6, each for accommodating a dowel pin, 7. Each dowel pin 7 may be removably fitted into one hole of two sets of three holes 8, 8' in the board 1 beneath. The strip 3 is spaced from the surface of the board 1 when the strip is lying parallel to it.

The surface of the board is provided with two further sets of holes 9, 9' for a further removable dowel pin. The purpose of these four sets of holes 8, 8', 9, 9', is to allow the jig to accommodate backing sheets for the three sizes of elongated registration plates, and the two sizes of square registration plates, which are in common use. Depending on the size of the backing sheet, a dowel pin is fitted into the appropriate hole of each of the sets 8, 8', and a further dowel pin 12 is also fitted into the appropriate hole of either set 9, 9' (set 9 is for elongated registration plates and 9' for square ones). The dowel pins thus provide three-point location for the backing sheet.

The jig is associated with a set of formers. These are of three types. The first type, 10a, is in the shape of a rectangle having a smaller rectangle cut out from it, and is for positioning all of the characters with exception of the numeral "1". In accordance with legislation all of the characters except the numeral "1" must be of the same overall external dimensions, so the same former is suitable for all of them. The second type of former, 10b, is similar in shape but is narrower and is for accommodating the narrower numeral "1". The third type, 10c, is of plain rectangular shape and is simply a spacer for ensuring the correct spacing between the set of letters and the set of numerals of the registration number. Thus, a total of eleven formers (seven of type 10a, three of type 10b, and one of type 10c), is all that is required for making up any current British registration number consisting of three letters, up to three numerals and a further letter.

In use, a rectangular or square sheet of

reflective material 11 such as the "Reflecto-lite" material mentioned above of appropriate size for a vehicle registration plate, and to which an acetate polymer substrate has been applied for added strength, is placed on the board 1 in contact with the dowel pins 7 and 12 and in certain instances with one edge extending under the edge 4 of the strip 1.

- The formers 10a, 10b, and 10c are then arranged as appropriate on the backing sheet, with their edges abutting the edge 4 of the strip 1, each former butting against the adjacent former or formers. The scale 5 on the strip 1 is used to centre the formers correctly on the backing sheet.
- The characters 13 making up the vehicle registration number are then placed within the appropriate formers 10c and 10b, and their positions are determined exactly by the positions of the formers.
- The strip 1 is then pivoted clear of the backing sheet 11, and the formers 10a, 10b, and 10c are carefully removed without disturbing the characters 13. A sheet of transparent acrylic material of the same dimensions as the backing sheet, and provided with a layer of adhesive which has previously been protected by a removable paper substrate, is then pressed down onto the backing sheet on which the characters are resting, using the three dowel pins as guides to ensure accuracy. The resulting assembly is passed between pressure rollers to strengthen the bond between the transparent sheet and the backing sheet, and finally any necessary trimming of the edges of the registration plate is carried out.
- Although this invention has been particularly

described in relation to a method of making vehicle registration plates, it could equally well be used to make other types of information display panels, such as signboards, nameplates, or notices.

CLAIMS

1. A method of making an information display board, such as a vehicle registration plate, comprising arranging characters of a thin opaque sheet material loosely on a contrasting backing sheet, then adhering to the backing sheet carrying the characters a sheet of a transparent material, so that the characters are trapped between the backing sheet and the transparent sheet, and are readily visible through the transparent sheet.
2. A method according to Claim 1, wherein the characters are cut from a sheet of biaxially-orientated high-impact polystyrene.
3. A method according to Claim 1 or Claim 2, wherein the backing sheet is reflective.
4. A method according to any preceding Claim, wherein the transparent sheet is a sheet of clear acrylic resin.
5. A method according to any preceding Claim, wherein the characters are positioned on the backing sheet using a jig and abutting formers into which the individual characters can be accurately fitted.
6. An information display panel, such as a vehicle registration plate, made by the method of any preceding Claim.
7. A method of making a vehicle registration plate, substantially as herein described, with reference to the drawings.